

cTRAIN Training System

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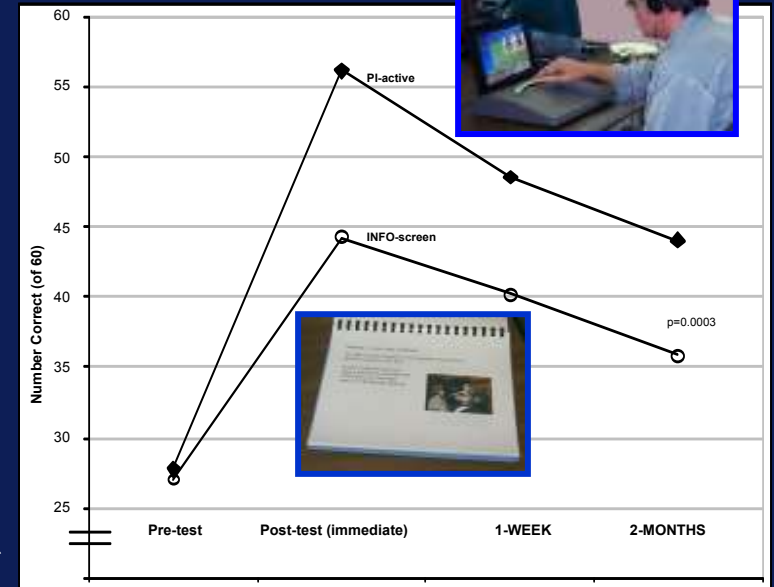
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cTRAIN for OSH Training

- Behaviorally-based
 - Self-paced
 - Frequent quizzes
 - Immediate feedback
 - Repetition following an error
- Developed for a *very* wide range of students



How does cTRAIN differ from traditional internet-delivered e-learning programs?

- cTRAIN resides on the PC, eliminating bandwidth-related delays

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.



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- Option of user input on 9BUTTON instead of keyboard



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- cTRAIN resides on the PC, eliminating bandwidth-related delays
- Option of user input on 9BUTTON instead of keyboard
- Unique “information set” structure to ensure learning through frequent quizzing and looping following errors
(can ignore this structure)



Pre-Test
Info Set
Info Set
Info Set
Info Set
Info Set
Info Set
Info Set
Post-Test

Information Set

– Info screen(s)

– Quiz screen(s)

• Wrong --> repeat info set

• Correct --> progress

How does cTRAIN differ from traditional internet-delivered e-learning programs?

- cTRAIN resides on the PC, eliminating bandwidth-related delays
- Option of user input on 9BUTTON instead of keyboard
- Unique “information set” structure to ensure learning through frequent quizzing and looping following errors
(can ignore this structure)
- ‘How-to’ user instructions developed for minimally-educated populations (first 10 screens of cTRAIN, taking 3-15 minutes depending on education/computer experience)



Ratings of working with cTRAIN

Food Service Workers



Graduate Students



Drywall Finishers



Orchard Workers



Ratings of working with cTRAIN

Food Service Workers

<u>Rating</u>	<u>No. rating</u>
Excellent	50
Good	18
OK-Neutral	4
Not very good	1
Poor	0

age = 39.7 educ = 12.4

Graduate Students

<u>Rating</u>	<u>No. rating</u>
Really liked method	0
Liked method	17
Neutral	8
Disliked method	3
Really disliked	0

age = 26.9 educ = 15.9

Drywall Finishers

<u>Rating</u>	<u>No. rating</u>
Excellent	2
Good	4
OK-Neutral	1
Not very good	0
Poor	0

age = 38.2 educ = 11.1

Orchard Workers

<u>Rating</u>	<u>No. rating</u>
Excellent	31
Good	17
OK-Neutral	2
Not very good	0
Poor	0

age = 46.6 educ = 5.6 Consented S's

Info Screen

Unit 1

Fit Tests and User Seal Checks

You should perform positive and negative **USER SEAL CHECKS** during the day to be sure your respirator is working:

- **POSITIVE** pressure user seal check: Place your hand over the purge valve and gently blow out (left picture).
 - **NEGATIVE** pressure user seal check: Cover the cartridges and breathe in (picture on right).
- In both checks, **NO AIR** should leak into or out of the respirator. If air leaks, you have a bad fit--get fitted with another respirator.



POSITIVE



NEGATIVE



1



2



3



4



5



6



7



8



9



cTRAIN

- Text
- 1 picture
or movie

Quiz Screen

Like Info
Screen--

except a quiz question replaces
the information area with 2-4 answers

Unit 1

Quiz

Before being assigned to work requiring the use of a respirator you must first:

- 1 Undergo a brief product evaluation, which is generally administered by your supervisor.
- 2 Have a fit test to make sure you have the correct size and shape of the respirator.
- 3 Determine the accuracy and durability of your respirator.
- 4 Learn the typical applications of your particular respirator so you will use the respirator in appropriate work environments.

PICK PICK PICK PICK HIDE TELL MORE BACK NEXT 11 - 32 TRAIN

Testing cTRAIN: orchard workers



Ladder safety
training

Training in BC orchards



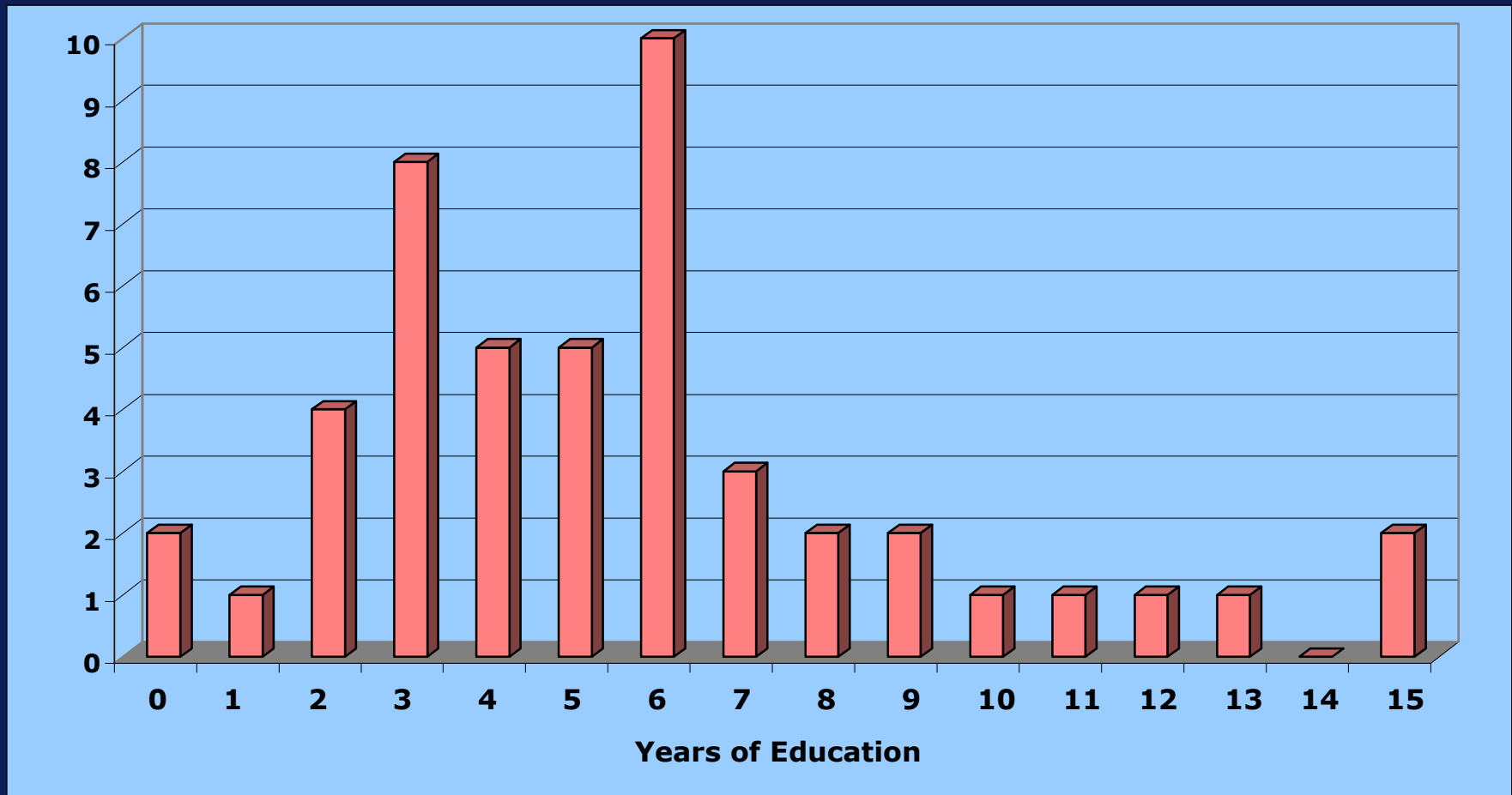
Demographics

- Trained 109 orchard workers
 - key supervisor/crew leader (6)
 - machinery operators (3)
 - orchard workers (100)
- 51 volunteered for research study
 - all but 2 from Mexico
 - Hispanic (96%) Af. Am.+Hispan. (4%)
 - age = 46.6 (SD = 9.2)
 - years in US = 20.5 (SD=7.3)



Demographics

- years of education = 5.6 (SD = 3.5)



Examiner's Difficulty Ratings

Easy -- P asks 0-2 questions on program use,
0 questions during information training

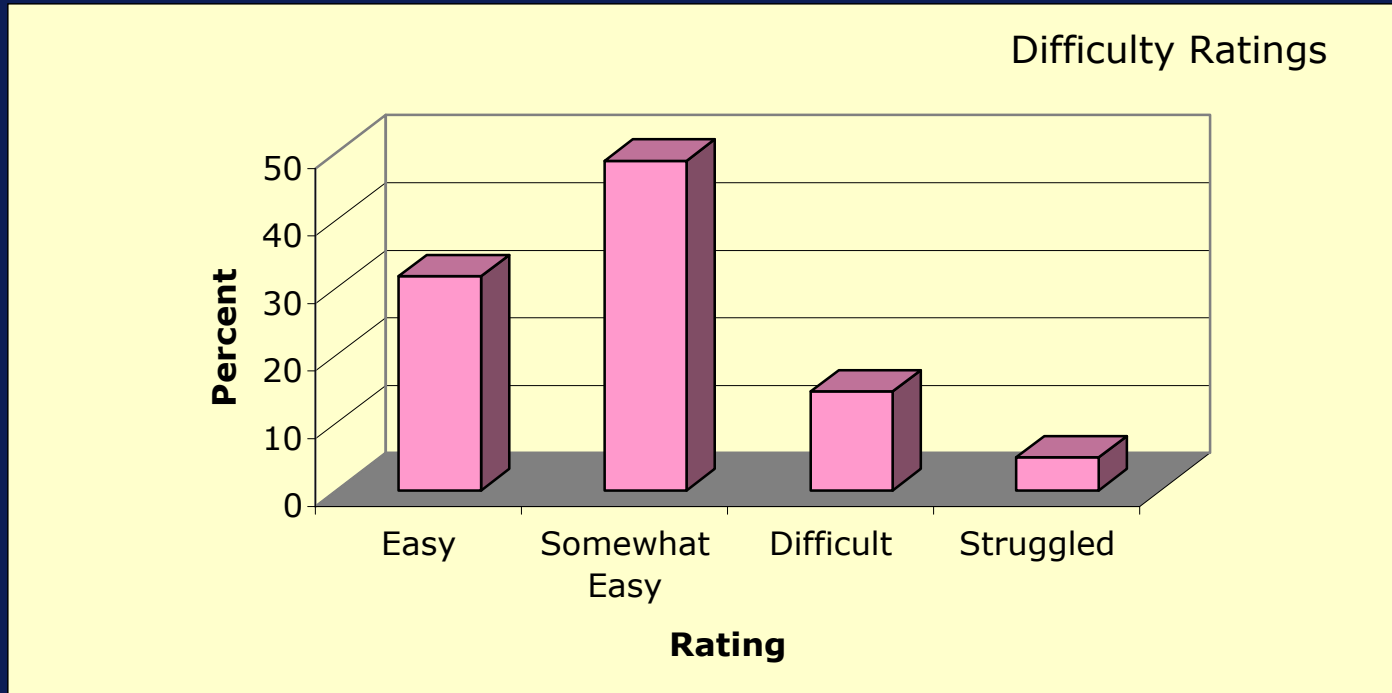
Somewhat Easy -- P asks 2-3 questions on program use,
may answer system training question wrong once

Difficult -- P asks 4 or more questions on program use,
answers system training question wrong at least 2 times,
asks 2-5 questions during content training.

Struggled – P needs constant attention,
asks questions on nearly every
screen of content training,
appears frustrated, repeats
mistakes after examiner intervention.



Examiner's Difficulty Ratings



Note: Objective *ratings* by a Research Assistant working for OHSU and the cTRAIN developers



Evaluation of Training Effectiveness

- Reaction
 - Did the employees like the training?
- Knowledge
 - Did they learn information?
- Behavior
 - Did their work practices change?
- Results
 - Did injuries or work comp claims decrease?

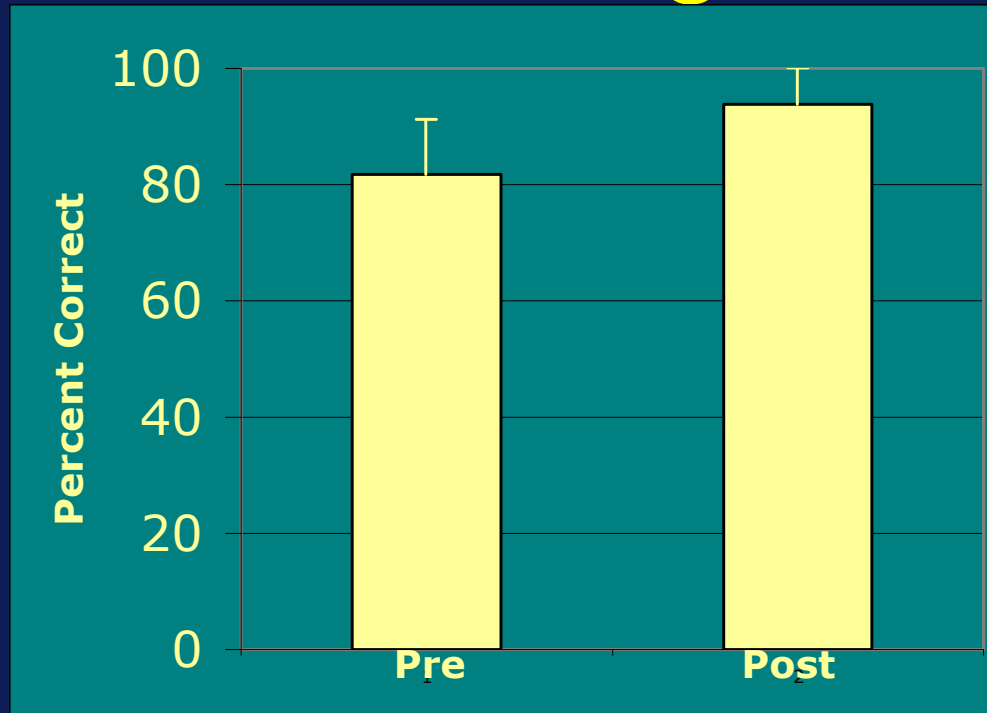
Kirkpatrick's four levels of evaluation

Reaction (Rating) of Training

Orchard Workers	
<u>Rating</u>	<u>No. rating</u>
Excellent	31
Good	17
OK-Neutral	2
Not very good	0
Poor	0



Knowledge



- 21 2-answer questions
- All orchard workers were experienced in using ladders (avg = 10 years)
- All improved pre>post



Work Practices (behaviors)



Observed work practices:

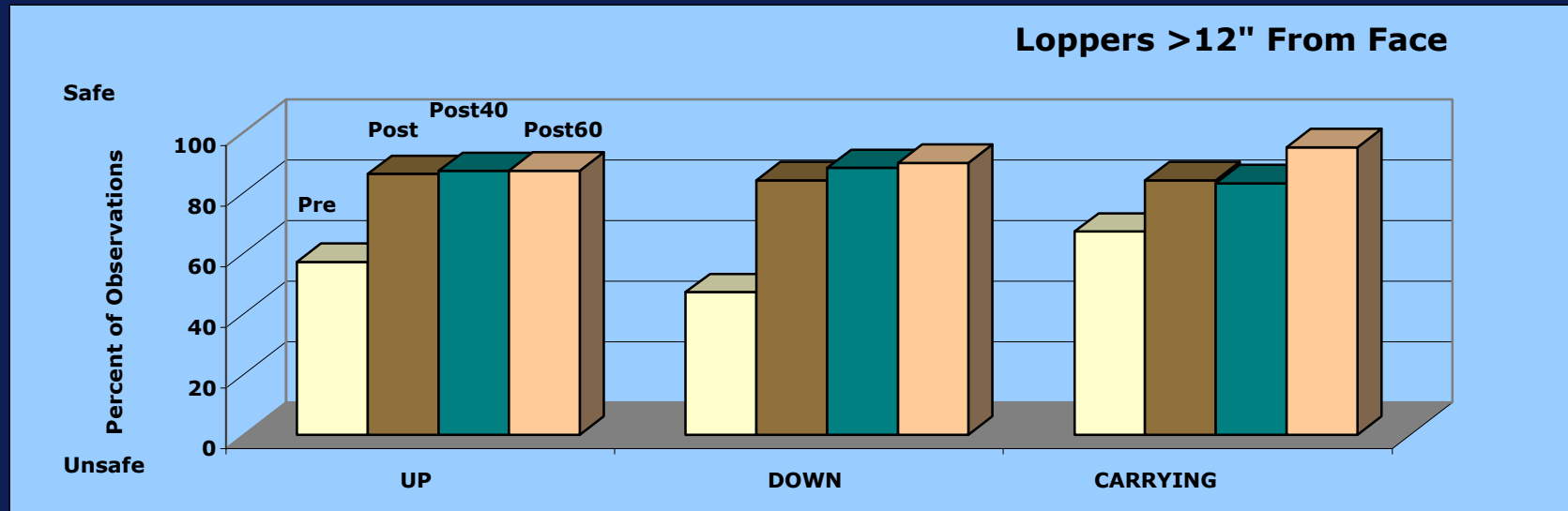
Pre + Post + Post-40 days + Post-60 days

Work Practices (behaviors)



Defined safe and unsafe work practices
(based on the practices taught by the training)

Work Practice Changes

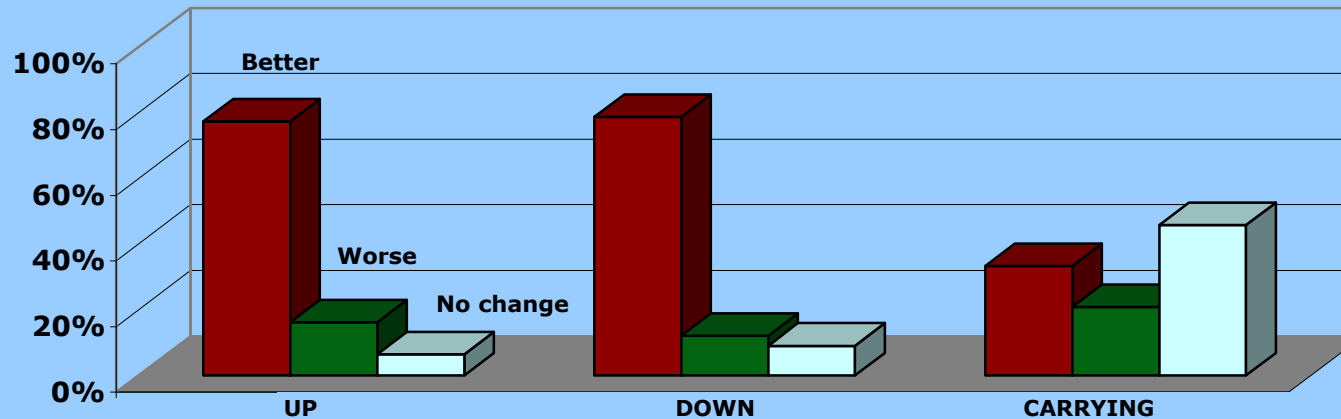


One work practice changed after training

Work Practice Changes

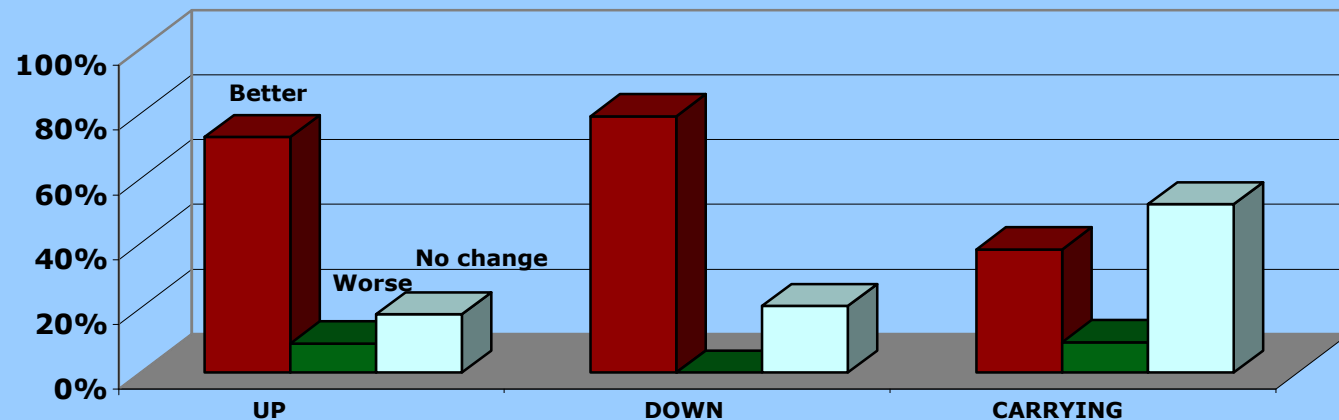
Change from Pre to Post

Loppers >12" From Face



Change from Pre to Post 40

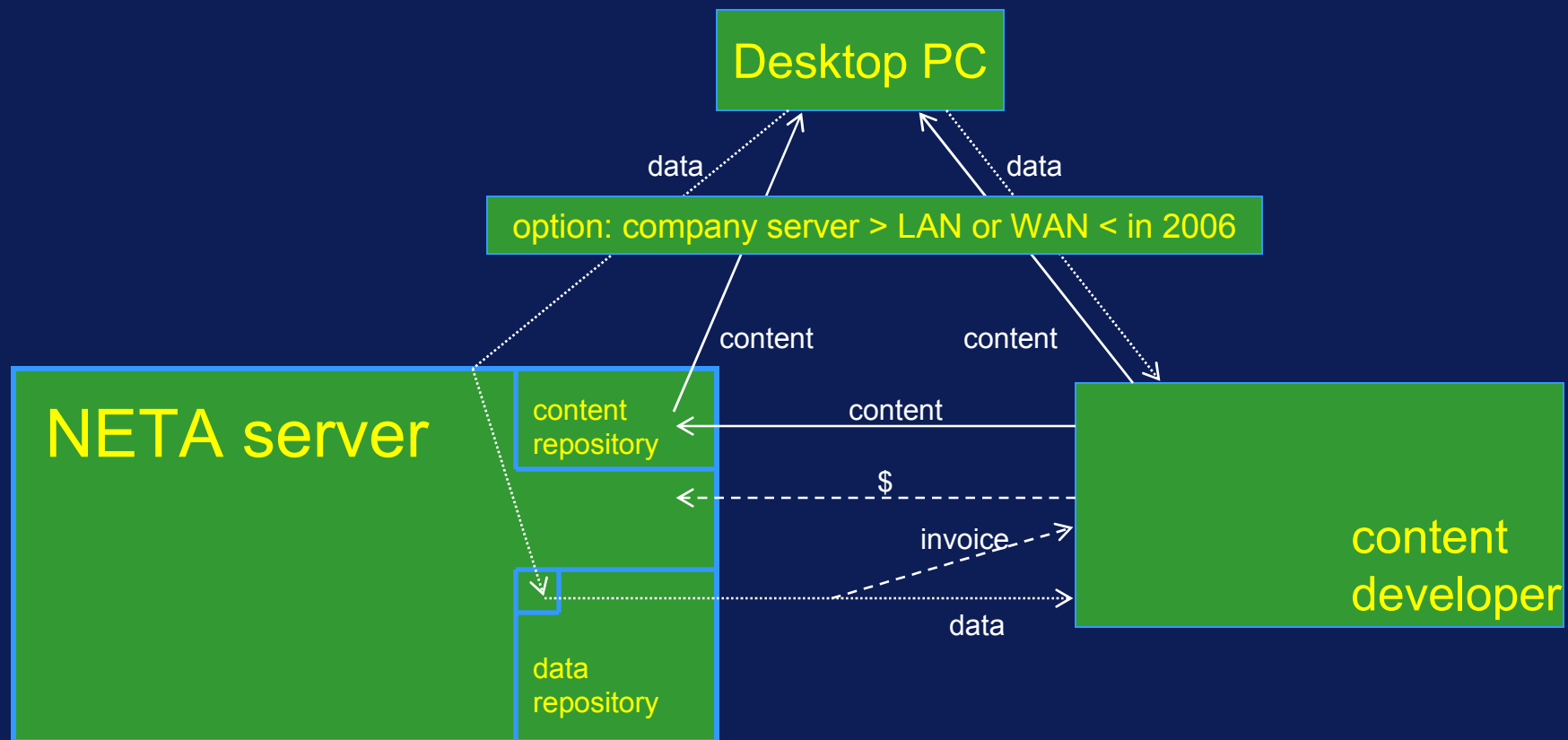
Loppers >12" From Face



Percent of *individuals* changing pre to post

cTRAIN evolution

- Deliver content via CDs to PCs (2004)
- Content hosting (for a company, or product generating a revenue stream) (2005)
- Deliver content via LANs or WANs to PCs (2006)



Revenue generation

- Two program elements:
 - Manager (present content, record data) - **no cost**
 - Builder (create or change content) - **\$2500** (waived for collaborations)
- Per-use fee for completing each training topic
 - **\$5** (1-1000), **\$2.50** (1001-5000), **\$1** (5001 and up)
- Content hosting - **fee based on disk space**
- 9BUTTON - **\$435**



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